Sacramento Valley Water Management Agreement Short-term Workplan Executive Summary

October 2001

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Background

As an alternative to participating in the adversarial State Water Resources Control Board (SWRCB) Phase 8 Bay–Delta Water Rights Hearings, California Department of Water Resources (DWR), U.S. Bureau of Reclamation (USBR), Sacramento Valley water interests, and export water users entered into the Sacramento Valley Water Management Agreement (Agreement) in April 2001. This unprecedented Agreement establishes a process by which the parties are collaborating in the development and implementation of a variety of water management projects that will increase the availability of Sacramento Valley water resources. The Agreement provides that increased supplies resulting from the projects would be used first to fully meet inbasin needs, but would also be made available to help meet the requirements of the 1995 Water Quality Control Plan (WQCP), as well as additional export needs. The Agreement relies on a regional strategy to ensure that local water needs are met while providing a peaceful and timely resolution of the dispute over responsibility for meeting the WQCP requirements.

In response to the Agreement, on April 26, 2001, the SWRCB issued an order to postpone and possibly dismiss Phase 8 of its Bay-Delta water rights proceedings and allow implementation of the Agreement. A key element of the Agreement is the development of a short-term workplan for investigating projects to meet the goals of the Agreement. Short-term projects were defined as projects that could potentially be implemented and provide benefits by the 2002 and 2003 water years.

This document summarizes the results of the Short-term Workplan effort. As required by the Agreement, this workplan was completed on October 29, 2001.

Process

The Short-term Workplan was prepared by the Workplan Development Team (WDT), which was formed to provide the technical expertise needed to evaluate the projects to be included in the workplans. A Management Team (MT) was formed to oversee the efforts of the WDT and provide policy-related input.

The WDT included water district, agency, and consultant staff representing both northern California and south-of-Delta export interests with expertise in the areas of

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project development, engineering, and benefit/impact assessment. The MT consisted of representatives from all signatory parties for the Settlement Agreement. Numerous meetings and conference calls were held to ensure agreement on approach and content, and to maintain the schedule.

The primary objective of the Short-term Workplan was to evaluate the technical feasibility and potential benefits and costs of projects submitted by willing participants. Project benefits include potential water supply, environmental benefits, and water quality improvements. This "bottom up" approach (i.e., focusing on projects proposed by willing participants) was considered key to the success of any project and the Agreement as a whole.

Solicitation and Identification of Project Proposals

The Northern California Water Association solicited proposals for potential projects throughout the Sacramento Valley on May 7, 2001. The solicitation included a questionnaire requesting a project description, potential supply and other benefits, likely beneficiaries, estimated cost, and schedule. Numerous responses were received from up and down the valley, from as far north as Redding to south of Sacramento. Additional projects were identified through discussions with DWR and review of projects submitted for funding available under various state programs (e.g., AB 303).

Detailed technical evaluations were prepared for each project, and approximately 45 projects were eventually included in the Short-term Workplan. As shown on Figure 1, the proposed projects are spread geographically across the Sacramento Valley. These projects were then grouped into following four major categories (the total number of projects in each category is shown in parentheses):

- ***Surface/Groundwater Planning*** (12)–monitoring, areawide inventory, or assessment
- ***System Improvement*** (13)–canal lining, tailwater recovery, or improved operations
- ***Water Management*** (14)–facilities/programs to use and monitor surface water and groundwater
- ***Institutional*** (6)–transfers or regulatory hurdles

Approach

The foundation of the Short-term Workplan is represented by the project evaluation technical studies conducted for each of the proposed projects. Short-term projects were defined as those that could be implemented in the next 1 to 2 years and, therefore, included activities and potential supply quantities that were believed to be technically and institutionally feasible. The following set of initial screening criteria were developed to guide the selection and evaluation of projects:

- Projects will assist in meeting the following goals:
  - Provide water to meet upstream demands
  - Improve water quality and export supplies
  - Provide environmental benefits
  - Provide operational flexibility
- Will result in a minimum of adverse environmental impacts
- Appear to be institutionally feasible
- Appear to be technically feasible
- Could be implemented in water year 2002-03

- No evident environmental permitting fatal flaws according to current knowledge/expert opinion

Relationship of Projects and Sub-basins

The relationship among projects was identified early in the process as key to the successful development of the Short-term Workplan. The goal was to develop a mix of projects within each sub-basin that maximize potential benefits and minimize potential impacts. Evaluating projects within sub-basins is the approach historically taken and proven successful by DWR and used in the development of the Sacramento River Basinwide Water Management Plan (BWMP); therefore, it was determined best to assess the interaction of projects in the context of sub-basins. As shown on Figure 1, these sub-basins generally represent hydrologic and groundwater aquifer boundaries.

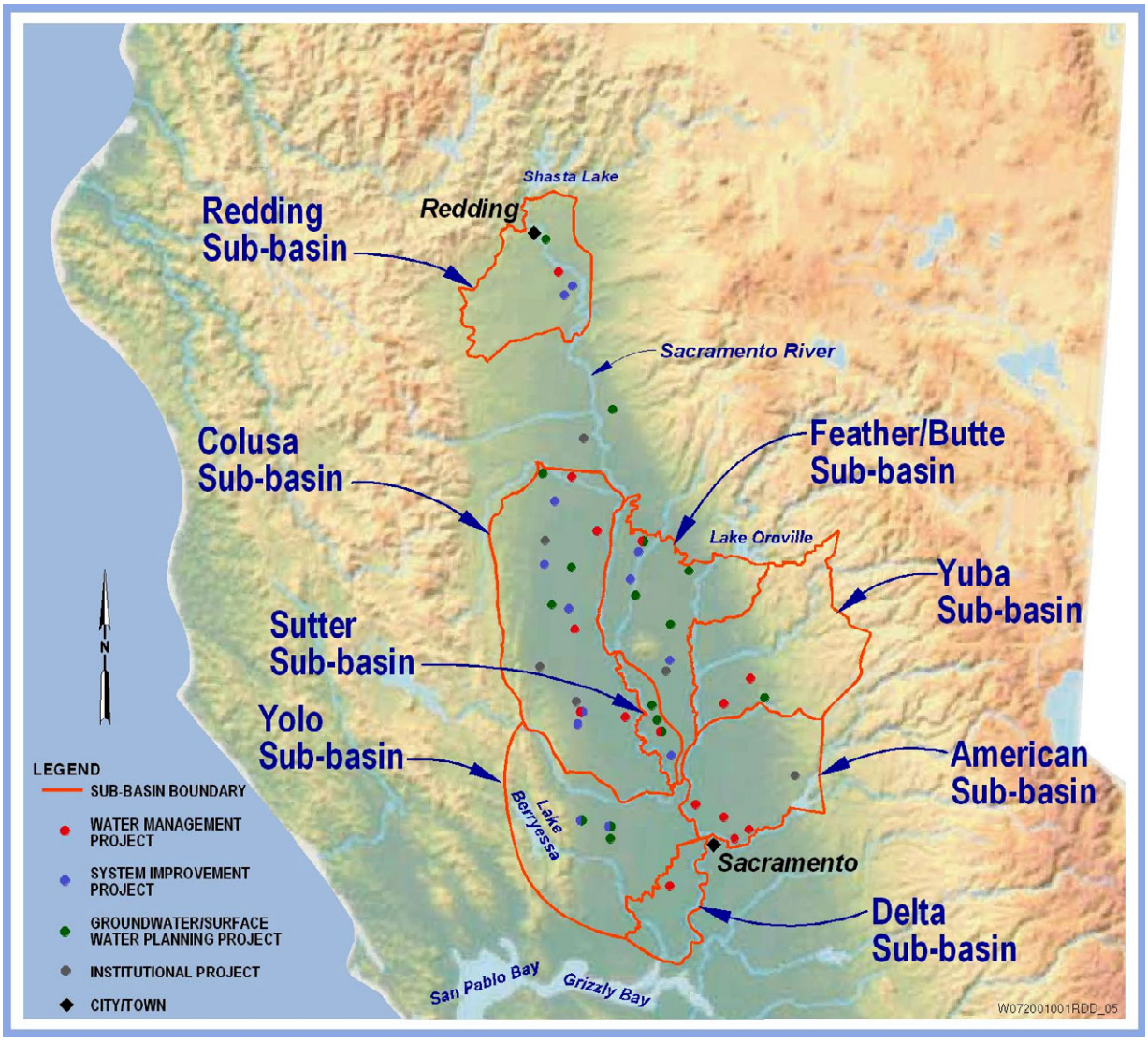
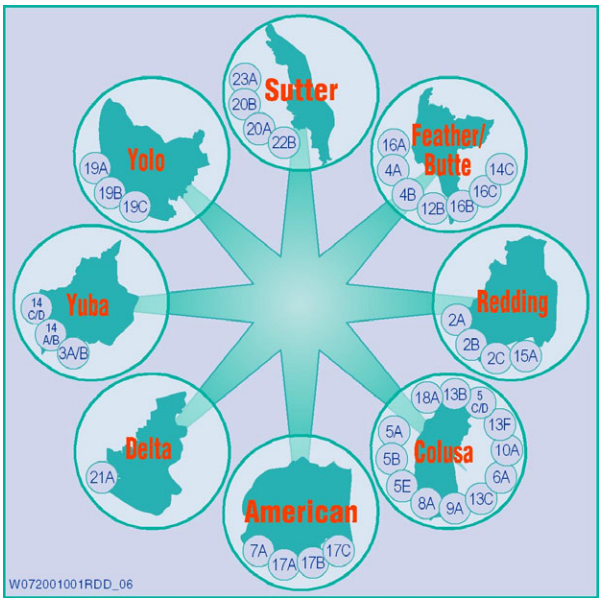


Figure 1
Proposed Projects across Sacramento Valley and Northern California

The following eight sub-basins were used to characterize potential benefits:

- Redding
- Feather/Butte
- Yuba
- Yolo
- Colusa
- Sutter
- American
- Delta

Sub-basin-level evaluations were also determined to be useful to identify the projected future water needs within the sub-basins where data were available. Future sub-basin water requirements were identified for normal and critical years using DWR-projected land use and water data, as well as current contract provisions and historical maximum curtailments for the four sub-basins evaluated in the BWMP. Potential order-of-magnitude estimates and qualitative use discussions were developed for the other four sub-basins.



Gaming and Modeling

The WDT and MT are evaluating the gaming tools used in the preparation of the BWMP to explore the potential benefits of the proposed projects under various operational scenarios.

Evaluations and Results

As discussed above, a summary technical evaluation was prepared for approximately 45 projects evaluated by the WDT and MT. The evaluations include the following information:

- Project description
- Estimated expected net and secondary benefits (including environmental)
- Preliminary estimate of quantity of water or nature of other water management benefits
- Preliminary order-of-magnitude construction cost estimates and determination of expected annual costs (operation and maintenance)
- Major environmental issues and benefits
- Project implementation plan, including the requirements of any monitoring necessary to evaluate the performance of the project
- Potential timetable for implementing the project

Table 1, located at the end of this executive summary, lists the projected costs and benefits of all of the projects detailed in the Short-term Workplan.

Results

As shown on Figure 1, a generally even distribution of project types was proposed across northern California, with the majority of projects being proposed in the Colusa Sub-basin. Figure 2 summarizes the potential benefits from the water management and system improvement projects. It is estimated that the water management projects collectively could yield as much as 185,000 acre-feet of potentially "new" water supplies. The system improvement projects are estimated to provide 100,000 acre-feet in benefits, although most of this amount will occur in

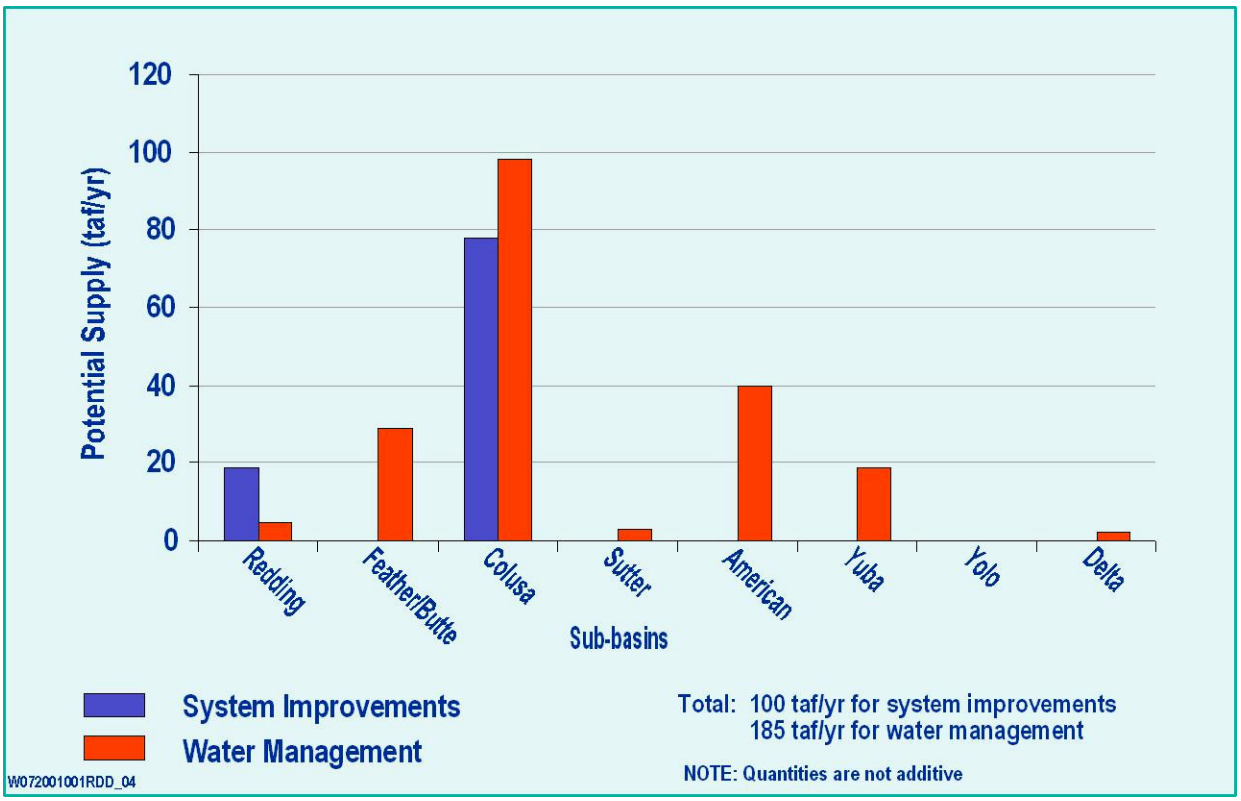


Figure 2
Preliminary Estimate of Short-term Maximum Benefit by Sub-basin

the form of re-routed flows and, therefore, is not generally considered a new water supply. Accordingly, these supplies are not additive. In addition, many of the projects will provide the following qualitative benefits:

- Additional water supply
- Changes in timing/availability of supplies
- Improved water quality
- Improved knowledge of groundwater/surface water interaction
- Improved understanding of groundwater resources and aquifer characteristics
- Identification of regulatory/policy constraints and development of mutual solutions (for institutional projects)

Review of each of the projects revealed that differing operations of any given project could conceivably result in differing potential benefits. For example, a proposed project within the Redding Sub-basin could be operated to assist in meeting municipal user needs in particular years, or water could instead be transferred out of the sub-basin to meet other needs. Similarly, a project in the Feather/Butte Sub-basin could be operated to maximize local environmental benefits (e.g., supplement stream flows or support riparian vegetation) or to transfer water to assist in meeting Bay-Delta water quality requirements. Figure 2 illustrates potential benefits for each sub-basin.

Figure 3 summarizes the potential cost of the projects by sub-basin. The total estimated cost is $87 million, broken down as follows:

- Water Management–$40 million
- System Improvement–$31 million
- Planning–$16 million

The majority of potential supply benefits were identified in the Colusa Sub-basin, in large part because Colusa Sub-basin had the

greatest number of projects being proposed of any sub-basin. Some areas, such as the Sutter Sub-basin, contained very few proposed projects because little data exist regarding Sutter's groundwater and surface water resources or constraints (e.g., water quality limitations).

Implementation Issues

While none of the short-term projects appears to have insurmountable institutional obstacles, many of the projects do have issues that will need to be addressed for successful implementation. For example, some of the system improvement projects could reduce adjacent wildlife habitat (e.g., canal lining) and/or existing downstream water supply benefits. Success of the water management projects will depend on satisfactory provision for assessing potential impacts on adjacent surface water and groundwater resources. Table 2 summarizes some of the key implementation issues within each of the sub-basins.

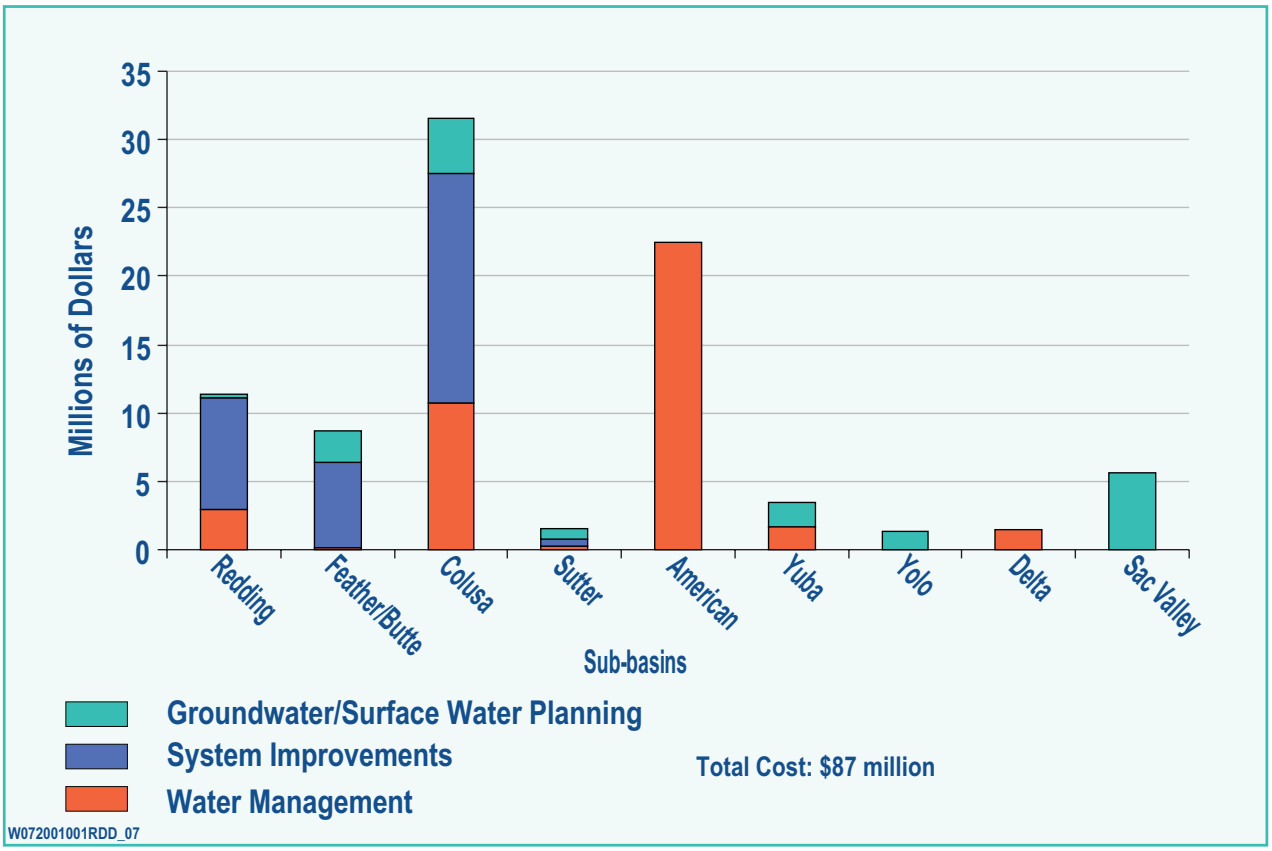


Figure 3
Total Short-term Costs by Sub-basin

TABLE 2
Summary of Implementation Issues by Sub-basin

Sub-basin	Implementation Issues
Redding	• Existing forum (Redding Area Water Council) and plan underway – Growing municipal and industrial needs and resultant potential impacts to groundwater levels – Some users (Central Valley Project [CVP] municipal water service contractors, e.g., Bella Vista) experience shortages even in normal years • All supply projects proposed by Anderson-Cottonwood Irrigation District (ACID) – Opportunities for transfers in normal years (and dry years when ACID contract amounts are not reduced) – River/aquifer relationship may make transfers difficult (ACID could not participate in Forbearance Agreement) – In-basin concerns related to transfers at the expense of meeting in-basin current and future needs • Surface water and groundwater not available to all users (including municipal CVP water service contractors) because of location/lack of infrastructure
Colusa	• Proponents range from Glenn-Colusa Irrigation District (GCID), Tehama-Colusa Canal Authority (TCCA), Orland Unit Water Users' Association (OUWUA), Orland-Artois Water District (OAWD), Glenn County to Reclamation District No. 108 (RD 108) • Primary shortages associated with TCCA member districts – institutional and structural projects proposed • No existing sub-basin forum; however, GCID, OUWUA, and OAWD working with DWR on Stony Creek Fan program • Local groundwater-level impact concerns related to proposed increase in pumping • Proposed GCID and OUWUA projects need to be coordinated • Opportunities for transfers in normal and dry years
Feather/Butte	• Sub-basin users are primarily State Water Project (SWP) contractors • Groundwater resources are substantial, but not currently available to all in-basin users (shortages in dry years) • Butte County proposing actions to improve existing groundwater modeling capability/expand existing monitoring to determine if water management is in county's interest • Western Canal Water District (WCWD) needs to coordinate water management programs with county • Operation of New Bullards Bar and Yuba County Water Agency (YCWA) management program should be coordinated with operation of the SWP and/or CVP to maximize water supply benefits for county and others

TABLE 2
Summary of Implementation Issues by Sub-basin

Sub-basin	Implementation Issues
Sutter	• Poor groundwater quality has historically limited groundwater use and opportunities for water management and reuse • Sutter Mutual Water Company (SMWC) and Sutter County proposing joint studies to evaluate extent of groundwater limitations • Sutter County proposing to evaluate countywide water resources • SMWC system improvement would increase reuse capability
Yuba	• Majority of sub-basin water requirements met through Yuba River and groundwater • Recent SWRCB decision resulted in increased fishery flows with corresponding potential decrease in water available to Yuba County users (potentially more frequent shortages) • YCWA key entity: – Primary proposals are water management program and coordinated re-operation of New Bullards Bar to maximize the management potential – Local concerns, extensive DWR/USBR/California Department of Fish and Game coordination required for re-operation • Brown's Valley Irrigation District (BVID) management and system improvement projects smaller scale but beneficial
American	• Existing forum (Sacramento-Area Water Forum) in place • All proposals are water management (Sacramento Groundwater Authority (SGA)/Natomas Central Mutual Water Company [Natomas]) – SGA projects anticipated to be covered by Water Forum Environmental Impact Report – SGA project with Placer County will require extensive coordination given significant infrastructure • Natomas project should be coordinated with SGA program
Yolo	• Proposed conversion to increased surface water use by agriculture in wet years to promote water management concerns related to Yolo-Zamora Water District (Y-ZWD) (recent subsidence) – project could provide benefits • Potential for out-of-basin transfers limited (Y-ZWD area did not participate in Bay-Delta Hearings because of lack of hydraulic connection) • Substantial surface water and groundwater resources believed to be available in North Delta area
Delta	• Firm surface water supply available through Delta channels and contract with DWR; substantial groundwater resources believed to be available • Proposed construction and use of groundwater wells to test groundwater capability and surface water interaction • Potential benefit of reduced surface water diversions from Delta channels through groundwater exchange

Funding

Approximately $87 million will be required for the capital costs of the short-term projects. Some of these projects have already received partial funding through programs such as Proposition 13, AB 303, and the CALFED Water Use Efficiency program; but the vast majority of the projects have received little to no funding to date. Project funding and potential cost sharing among beneficiaries is currently a topic of discussion between the WDT and MT. Funding availability and the distribution of potential benefits will drive ultimate project funding decisions.

Relationship with the CALFED Program

As the August 28, 2000 CALFED Programmatic Record of Decision acknowledges, successful implementation of the CALFED program will depend partly upon regional strategies and initiatives. The Agreement will be implemented in a manor compatible with CALFED's goals. This Short-term Workplan embodies the type of regional effort desired by CALFED:

- The proposed system improvement projects represent the desired outcome of the CALFED Agricultural Water Use Efficiency Program
- The water management projects are consistent with groundwater programs called for by CALFED
- The water transfer agreements that will result from these projects are consistent with CALFED's Water Transfer Program

Many of CALFED's environmental restoration, water quality, and water supply goals will be met by implementation of these projects. It is assumed, therefore, that CALFED will provide at least some of the public funding for these projects, although such funding decisions will necessarily be made by CALFED on a case-by-case basis.

Depending on project type and operation, specific potential environmental benefits include:

- Increased flows and/or changes in timing to assist in meeting the WQCP requirements, with resultant aquatic habitat benefits
- Reduced diversions during critical fishery life stage periods
- Augmented stream flows to assist in providing improved fishery habitat
- Increased availability of supplies to support Environmental Water Account goals and needs

To the extent that CALFED agencies participate in the implementation and/or funding of these projects, their environmental documentation will need to be coordinated and consistent with existing and future environmental planning and documentation by CALFED.

Environmental Documentation

Projects included in the Short-term Workplan will fully comply with NEPA or CEQA. The MT has recommended that an Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) document be prepared to address the benefits and potential impacts associated with implementing the program. The document will reference the recent CALFED programmatic document. DWR and USBR will be the lead California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) agencies, respectively, with project proponents acting as responsible (or potentially co-lead) agencies.

Outreach

The project team has continued an outreach program to inform agencies, environmental interests, and the public of the Agreement and the results of the Short-term Workplan efforts. Numerous presentations and briefings have been or are soon to be made to the CALFED Management Team and associated staff, as well as to county supervisors (and respective farm bureaus), water districts, and environmental groups including:

- SWRCB
- Glenn County
- Butte County
- Shasta County
- Yuba County
- Sacramento County
- Project Proponents
- Trust for Public Lands
- Natural Heritage Institute
- Plumas County
- Colusa County
- Tehama County
- Sutter County
- Yolo County
- The Bay Institute
- The Nature Conservancy
- U.S. Fish and Wildlife Service

Additional meetings will occur with these entities and others to continue providing updates and gain an understanding of agency and public perspectives. The State Water Board order also calls for public workshops to be conducted every 6 months to provide public participation in the process.

Implementation

The Agreement calls for the workplans to include a provision for allocating the costs and benefits of the projects included in the workplans. The WDT has been and will continue to research funding opportunities for sharing the costs of the projects. Principles of agreement specifying an overall approach to these issues were adopted by the parties on December 14, 2001, and will be further refined in a more detailed agreement to be completed by Spring 2002. Implementation of each of the projects will depend, however, upon the initiative of the individual district proposing the project. Each district will be tasked with solicitation of funds and execution of individual agreements with the project and export interests as to how water produced from each project will be allocated and paid for.

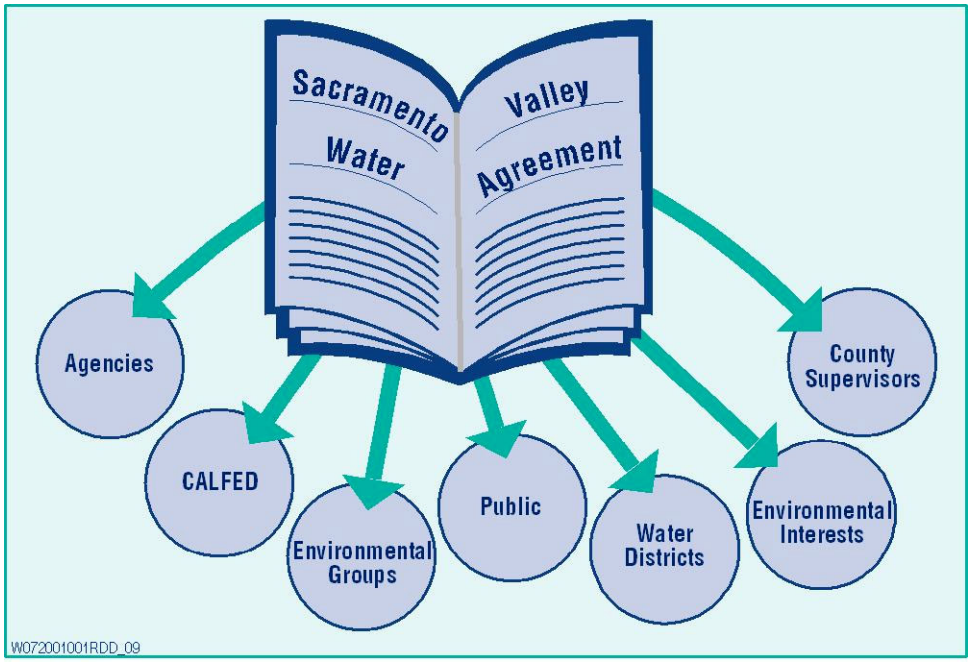


TABLE 1
Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries[a]	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr)[b]	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
REDDING SUB-BASIN											
2B	ACID Conjunctive Use Program	*Conjunctive Water Management*	ACID	Shasta/Tehama County	ACID	CALFED $300,000	Construct six groundwater extraction wells	5,000	$3,000,000	$150,000	$2,700,000
2A	ACID Churn Creek Lateral Improvements[c]	*System Improvement*	ACID	Redding/ Anderson, California-Shasta County	ACID, Redding Basin	$100,000	Eliminate seepage and spills with pipeline to replace leaky canal lateral in the reach east of the Sacramento River	9,000	$5,400,000	$54,000	$5,300,000
2C	ACID Main Canal Modernization Project	*System Improvement*	ACID	Shasta County	Redding Basin CVP, water control, automation, measurements	$100,000	Reduce diversions, eliminate spills	10,000	$2,700,000	$27,000	$2,600,000
15A	Shasta County Water Agency Redding Basin Water Resources Management Plan[c]	*Groundwater/ Surface Water Planning*	Shasta County Water Agency (SCWA)	Redding Basin, Shasta County	Redding Basin Water Resources Master Plan, Sacramento River control, local water users including municipalities and agriculture	AB 303 grant for $130,000	Complete Phase 2C - Water Supply and Management Alternatives, part of multi-step planning process	0	$250,000	Not applicable	$120,000
					Conjunctive Water Management Totals	**$300,000**		**5,000**	**$3,000,000**	**$150,000**	**$2,700,000**
					System Improvements Totals	**$200,000**		**19,000**	**$8,100,000**	**$81,000**	**$7,900,000**
					Groundwater/ Surface Water Planning Totals	**$130,000**		**0**	**$250,000**	**$0**	**$120,000**
					Totals	**$630,000**		**Not applicable[d]**	**$11,350,000**	**$231,000**	**$10,720,000**
FEATHER/BUTTE SUB-BASIN											
16A	Western Canal Water District Groundwater Monitoring Project	*Conjunctive Water Management and Groundwater/ Surface Water Planning*	Western Canal Water District	Butte County	Butte County, Western Canal	None	Additional monitoring wells and monitoring groundwater response to pumping	29,000	$323,000	$870,000	$323,000
12B	Sutter Extension Water District Sutter-Butte Main Canal Lining Project[c]	*System Improvement*	Sutter Extension Water District, Butte Water District, Gridley Water District, Richvale Irrigation District	Butte and Sutter counties	Gray Lodge Wildlife Refuge, water districts, Oroville Lake storage	None	Conduct field study, obtain environmental permits, develop final construction drawings	0	$5,900,000	Not applicable	$5,900,000
16B	Western Canal Water District Tailwater Recovery System Feasibility Study[c]	*System Improvement*	Western Canal Water District	Butte County	Western Canal	$125,000 from Prop. 13 funds	Feasibility analysis of a tailwater recovery system	0	$125,000	Not applicable	$0
16C	Western Canal Water District Water Use Efficiency Project	*System Improvement*	Western Canal Water District	Butte County	Downstream water quality, Feather River diversions, environment	None	Purchase of water management software and recorders, reconstruction of meter calibration station	0	$266,000	$13,300	$266,000
4A	Butte County Integrated Watershed and Resource Conservation Program	*Groundwater/ Surface Water Planning*	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	$950,000 from State Water Resources Control Board, Department of Water Resources (DWR)	Integrated watershed and resource conservation, groundwater monitoring and modeling, forecast water use	0	$1,200,000	Not applicable	$250,000

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4B	Butte County Groundwater Monitoring Program	*Groundwater/ Surface Water Planning*	Butte County	Butte County	Paradise Ridge area, Butte County agriculture	None	Additional monitoring wells and extensometer installation, monitoring	0	$616,000	Not applicable	$616,000
4C	Butte County Groundwater Modeling Program	*Groundwater/ Surface Water Planning*	Butte County	Butte County	Paradise Ridge area, Butte County agriculture, groundwater quality	None	Model calibration, scenario modeling, annual updates	0	$275,000	Not applicable	$275,000
	Sutter Extension Water District Efficient Use and Management of Return Flows	***Institutional***	***Sutter Extension Water District***		***Sutter Extension Water District***						
					Conjunctive Water Management Totals	**$0**		**29,000**	**$161,000**	**$870,000**	**$161,000**
					System Improvements Totals	**$125,000**		**0**	**$6,291,000**	**$13,300**	**$6,166,000**
					Groundwater/Surface Water Planning Totals	**$950,000**		**0**	**$2,253,000**	**$0**	**$1,303,000**
					Totals	**$1,075,000**		**Not applicable[d]**	**$8,705,000**	**$883,300**	**$7,630,000**
COLUSA SUB-BASIN											
5B	Glenn-Colusa Irrigation District (GCID) Development of Conjunctive Water Management Facilities[c]	*Conjunctive Water Management*	GCID	Glenn and Colusa counties	Groundwater users in Stony Creek Fan	None	Full utilization of private landowner wells	50,000 to 60,000	$300,000 (for short-term landowner project); $2,600,000 (for pilot study/wells in support of long-term project)	$1,800,000	$2,900,000
6A	Maxwell Irrigation District (MID) Conjunctive Use Project	*Conjunctive Water Management*	MID	Colusa County	MID, Colusa County	$75,000 (District cost-share)	Test-hole drilling, evaluation and production well construction and testing, groundwater monitoring	8,000 to 13,000	$2,000,000	$390,000	$1,925,000
8A	Stony Creek Fan Conjunctive Water Management Program	*Conjunctive Water Management*	Orland-Artois Water District (OAWD), Orland Unit Water Users' Association (OUWUA), GCID	Glenn County and the Stony Creek Fan	- OAWD (water supply reliability in all years) - OUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	$530,000 (DWR ISI)	The program consists of five elements: (1) Feasibility study (2) Groundwater production investigation (3) Groundwater monitoring program (4) Integrated groundwater/surface water model (5) Outreach plan Pilot scale projects would test direct and in-lieu recharge using existing facilities and privately owned wells through contractual agreements with well owners. Monitoring would be conducted to measure performance and basin response.	5,000 (potential minimum supply from pilot study)	$2,100,000 to $2,500,000	$100,000 to $150,000	$1,970,000

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10A	Reclamation District No. 108 (RD 108) Pilot Well Development/ Conjunctive Management Project[c]	*Conjunctive Water Management*	RD 108	Yolo and Colusa counties	RD 108, Yolo-Zamora Water District (Y-ZWD), CCWD, DWD, RD 787, Colusa Drain Mutual Water Company	None	Development of five production wells and analysis of basin response	15,000 to 20,000	$1,300,000	$525,000	$1,300,000
13F	TCCA Tehama-Colusa (TC) Canal Extension	*Conjunctive Water Management / System Improvement*	Tehama-Colusa Canal Authority (TCCA), Y-ZWD	Yolo County	Y-ZWD, City of Woodland, Yolo County Flood Control and Water Conservation District	None	Hydrologic and concept reports, begin initial California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) and preliminary design	0	$3,000,000 to $4,000,000	Not applicable	$4,000,000
5C/5D	GCID Flow Measurement Devices in Main Canal, Lateral System, and Drain Outflow Points/GCID Existing Automation Program[c]	*System Improvement*	GCID	Glenn and Colusa counties	GCID	None	Permitting, design, and construction of 12 flow measurement devices at previously identified system outflow points/permitting, design, and construction of 5 Main Canal check structures	40,000	$8,700,000	$106,000	$8,700,000
9A	OUWUA and TCCA Regional Water Use Efficiency Project[c]	*System Improvement*	OUWUA, TCCA	Glenn and Colusa counties	- OAWD (water supply reliability in all years) - OUWUA (improved management of surface water; infrastructure improvements) - GCID (improved reliability and increased operational flexibility)	WUE grant for $200,000	Feasibility study for modernization, regional pipeline, conjunctive water management	0	$300,000 (feasibility study); $5,000,000 (pilot projects)	Not applicable	$5,100,000
13B	TCCA T-C Canal Conveyance of Water to Sites Reservoir[c]	*System Improvement*	TCCA	Glenn and Colusa counties	All valley water users	None	Feasibility study, review ability of TC Canal to convey potential water to a Sites Reservoir	0	$400,000	Not applicable	$400,000
13C	TCCA Development of Conveyance Alternatives for TCCA Emergency Water Supplies[c]	*System Improvement*	TCCA	Glenn, Colusa, and Yolo counties	TCCA, other users if district's requirements are met	None	Feasibility study for Stony Creek conveyance options; investigate an interim solution to operate a constant head orifice (CHO); agency coordination and permit planning	0 to 38,000 (if interim solution implemented)	$100,000	Not applicable	$100,000
5A	GCID Feasibility Study Regulatory Reservoirs and Off-canal Storage[c]	*Groundwater/Surface Water Planning*	GCID	Glenn and Colusa counties	GCID , users of Colusa Basin Drain Water, TCCA	Yes, WUE grant for $100,000	Feasibility study	0	$750,000	Not applicable	$650,000

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5E	GCID Glenn County Groundwater Monitoring Program and Model Development[c]	*Groundwater/ Surface Water Planning*	GCID	Glenn County and the Stony Creek Fan	Glenn County and groundwater users that draw from the Stony Creek Fan	AB 303 grant for $250,000	Develop groundwater data clearinghouse, analyze existing data, design monitoring program, install new monitoring wells, develop groundwater model	0	$2,700,000	Not applicable	$2,450,000
18A	Tehama County Water Inventory and Analysis	*Groundwater/ Surface Water Planning*	Tehama County	Tehama County	Tehama County, TCCA	AB 303 grant for $190,000	Information gathering process and analysis	0	$330,000	Not applicable	$140,000
	TCCA Preferred Alternative Coordination	***Institutional***	***TCCA***		***TCCA, fisheries***						
	Water Transfer Clearinghouse	***Institutional***	***TCCA***		***TCCA***						
	TCCA Transportation of CVP/non-CVP Water	***Institutional***	***TCCA***								
					Conjunctive Water Management Totals	**$605,000**		**78,000 to 98,000**	**$10,700,000**	**$2,865,000**	**$10,095,000**
					System Improvements Totals	**$200,000**		**40,000 to 78,000**	**$16,500,000**	**$87,000**	**$16,300,000**
					Groundwater/Surface Water Planning Totals	**$540,000**		**0**	**$3,780,000**	**$0**	**$3,240,000**
					Totals	**$1,345,000**		**Not applicable[d]**	**$30,980,000**	**$2,952,000**	**$29,635,000**
YUBA SUB-BASIN											
14A/B	Yuba County Water Agency Conjunctive Use Project (Long-term Project)	*Conjunctive Water Management*	Yuba County Water Agency (YCWA)	Yuba County	YCWA, Yuba County	Short-term: fully funded (Prop. 13) Long-term: $200,000 (Prop. 13)	Installation of extraction wells	15,000	$1,300,000	$450,000	$0
3A/B	Brown's Valley Irrigation District Conjunctive Use and Water Management Project	*Conjunctive Water Management*	Brown's Valley Irrigation District	Yuba County	Brown's Valley Irrigation District, Yuba County	None	Development of four groundwater production wells in lower portion of district and a lift pump and conveyance pipe to supply water to upper end of district	3,600	$350,000	$108,000	$350,000
14C/D	Yuba County Water Agency Coordinated Operations Project	*Groundwater/ Surface Water Planning*	YCWA	Yuba County	YCWA, Yuba County	None	Feasibility investigation of water supply benefits for out-of-county use, environmental and Endangered Species Act (ESA) assessment, and potential increased flood control benefits	0	$1,750,000	Not applicable	$1,750,000
					Conjunctive Water Management Totals	**$1,500,000**		**18,600**	**$1,650,000**	**$558,000**	**$350,000**
					System Improvements Totals	**$0**		**0**	**$0**	**$0**	**$0**
					Groundwater/Surface Water Planning Totals	**$0**		**0**	**$1,750,000**	**$0**	**$1,750,000**
					Totals	**$1,500,000**		**Not applicable[d]**	**$3,400,000**	**$558,000**	**$2,100,000**

TABLE 1
Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries[a]	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr)[b]	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
SUTTER SUB-BASIN											
23A	RD 1500 Sutter Basin Groundwater Monitoring Well[c]	*Conjunctive Water Management/ Groundwater/ Surface Water Planning*	RD 1500, SMWC	Sutter Basin, Sutter County	All local water users	None	Additional monitoring well, monitoring and data collection	1,500 to 2,500	$550,000	$75,000	$550,000
22B	Sutter Mutual Water Company Irrigation Recycle Project[c]	*System Improvement*	Sutter Mutual Water Company (SMWC), Reclamation District No. 1500 (RD 1500)	Sutter Basin, Sutter County	SMWC	None	Feasibility analysis of a tailwater recovery system	0	$500,000	Not applicable	$500,000
20A	Sutter County Groundwater Management Plan	*Groundwater/ Surface Water Planning*	Sutter County	Sutter County	Sutter County	None	Information gathering process and analysis	0	$360,000	Not applicable	$360,000
20B	Sutter County Watershed Assessment and Monitoring Program	*Groundwater/ Surface Water Planning*	Sutter County	Sutter County	All local water users	None	Information gathering process and analysis	0	$86,000	Not applicable	$86,000
22A	*Sutter Mutual Water Company Conveyance System Modernization (combined with 11A - Basinwide Water Management Plan [BWMP] Sub-basin Measurement)*	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
					Conjunctive Water Management Totals	**$0**		**1,500 to 2,500**	**$275,000**	**$75,000**	**$275,000**
					System Improvements Totals	**$0**		**0**	**$500,000**	**$0**	**$500,000**
					Groundwater/Surface Water Planning Totals	**$0**		**0**	**$721,000**	**$0**	**$721,000**
					Totals	**$0**		**Not applicable[d]**	**$1,496,000**	**$75,000**	**$1,496,000**
AMERICAN SUB-BASIN											
7A	Natomas Central Mutual Water Company (NCMWC) Conjunctive Use Project	*Conjunctive Water Management*	NCMWC	Sacramento and Sutter counties	Natomas, northeast Sacramento County	None	Pump existing wells, monitoring and analyzing results after one season	15,000	$1,500,000	$450,000	$1,500,000
17A	Sacramento Groundwater Authority Conjunctive Use Program - San Juan Family/North Central Group Project	*Conjunctive Water Management*	Sacramento Groundwater Authority (SGA)	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of two wells (Fair Oaks WD-1, Citrus Heights WD-1) and extension of Walerga Pipeline	12,500	$8,300,000	$375,000	$8,300,000
17B	Sacramento Groundwater Authority Conjunctive Use Program City of Sacramento/Arcade Water District Area "D" Project[c]	*Conjunctive Water Management*	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Utilize existing facilities with construction of Howe Avenue Pipeline and inter-tie at Enterprise Pump Station and construction of Enterprise/Northrop Reservoir and Booster Pump Station	12,500	$12,700,000	$375,000	$12,700,000

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Project Number	Project Name	Type	Proponent	Location	Beneficiaries[a]	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr)[b]	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
17C	Sacramento Groundwater Authority Conjunctive Use Program Placer County Water Agency City of Sacramento Project	*Conjunctive Water Management*	SGA	Placer and Sacramento counties	SGA, Placer and Sacramento counties	None	Not applicable	Not applicable	Not applicable	Not applicable	$0
	Natomas Inter-basin Transfer Program	***Institutional***	***NCMWC***		***NCMWC***						
						Conjunctive Water Management Totals		**40,000**	**$22,500,000**	**$1,200,000**	**$22,500,000**
						System Improvements Totals		**0**	**$0**	**$0**	**$0**
						Groundwater/Surface Water Planning Totals		**0**	**$0**	**$0**	**$0**
						Totals		**Not applicable[d]**	**$22,500,000**	**$1,200,000**	**$22,500,000**
YOLO SUB-BASIN											
19A	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to the Yolo-Zamora Water District	*Groundwater/ Surface Water Planning/ System Improvement*	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	$365,000	Feasibility study for expanding surface water supplies to Yolo Zamora	0	$600,000	Not applicable	$235,000
19B	Yolo County Flood Control and Water Conservation District Conjunctive Use Project Feasibility Study for Expanding YCFC & WCD Surface Water Supplies to Agricultural Water Users in Areas	*Groundwater/ Surface Water Planning/ System Improvement*	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	$120,000	Feasibility study for expanding surface water supplies to agricultural areas northwest of Woodland	0	$640,000	Not applicable	$520,000
19C	Yolo County Flood Control and Water Conservation District Groundwater Quality Monitoring Program	*Groundwater/ Surface Water Planning*	Yolo County Flood Control and Water Conservation District	Yolo County	Yolo County Flood Control and Water Conservation District, Yolo County	None	Development of a groundwater quality monitoring program	0	$250,000	Not applicable	$250,000
						Conjunctive Water Management Totals		**0**	**$0**	**$0**	**$0**
						System Improvements Totals		**0**	**$0**	**$0**	**$0**
						Groundwater/Surface Water Planning Totals		**0**	**$1,490,000**	**$0**	**$1,005,000**
						Totals		**Not applicable[d]**	**$1,490,000**	**$0**	**$1,005,000**
DELTA SUB-BASIN											
21A	Reclamation District No. 2068 (RD 2068) Conjunctive Use Proposal[c]	*Conjunctive Water Management*	RD 2068	Yolo County	RD 2068, DWR and USBR	None	Develop a single production well to determine conjunctive use potential	1,000 to 2,000	$1,600,000	$30,000 to $60,000	$1,600,000
						Conjunctive Water Management Totals		**1,000 to 2,000**	**$1,600,000**	**$60,000**	**$1,600,000**
						System Improvements Totals		**0**	**$0**	**$0**	**$0**
						Groundwater/Surface Water Planning Totals		**0**	**$0**	**$0**	**$0**
						Totals		**Not applicable[d]**	**$1,600,000**	**$60,000**	**$1,600,000**

TABLE 1
Project Summary

Project Number	Project Name	Type	Proponent	Location	Beneficiaries[a]	Current Funding	Short-term (Completion by 2003)				
							Description	Potential Supply (ac-ft/yr)[b]	Capital Cost	Annual O&M Cost	Funding Required (in addition to current funding)
SACRAMENTO VALLEY											
11A	BWMP Sub-basin-level Water Measurement	*Groundwater/ Surface Water Planning*	BWMP participants	Sacramento Valley	Sacramento Valley water users	$100,000	Feasibility study, design and construction of water measurement facilities	0	$5,600,000	$0	$5,500,000
	Sacramento River Water Transfer Program	***Institutional***	***BWMP participants***		Sacramento Valley water users						
					Conjunctive Water Management Totals	**$0**		**0**	**$0**	**$0**	**$0**
					System Improvements Totals	**$0**		**0**	**$0**	**$0**	**$0**
					Groundwater/Surface Water Planning Totals	**$100,000**		**0**	**$5,600,000**	**$0**	**$5,500,000**
					Totals	**$100,000**		**Not applicable[d]**	**$5,600,000**	**$0**	**$5,500,000**
SACRAMENTO VALLEY BASINWIDE SUMMARY											
					Conjunctive Water Management Totals	**$2,205,000**		**168,100 to 195,100**	**$39,886,000**	**$5,778,000**	**$37,481,000**
					System Improvements Totals	**$525,000**		**59,000 to 97,000**	**$31,391,000**	**$181,000**	**$30,866,000**
					Groundwater/Surface Water Planning Totals	**$2,205,000**		**0**	**$15,844,000**	**$0**	**$13,639,000**
					Basinwide Totals	**$4,935,000**		**Not applicable[d]**	**$87,121,000**	**$5,959,000**	**$82,186,000**